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Data Management in the ARAC Emergency Response System*

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The Atmospheric Release Advisory Capability (ARAC) has begun the design and development of its third generation of systems software and architecture. During each generation increasing quantities of data have been managed through combinations of prebuilt (quasi) static databases and real-time, dynamically updated databases essential for timely, quality assured emergency response. In order to successfully manage this challenging task, substantial data access, handling and management software (programs, procedures, etc.) has been developed. In addition, extensive quality assurance review and testing are essential to the successful implementation of a valid data management function.

In the ARAC system we have successfully developed procedures for gathering accident scenario data by means of an event questionnaire. The response is then developed using topographic data from a worldwide (melded) terrain database, real-time weather data (dynamic) acquired and located for fixed geographic positions by means of a stations database along with real-time reports. Facility locations, characteristics and default accident scenario databases have been developed. Likewise radiological dose conversion factors and toxic chemical emergency response planning guide levels have been stored in databases. Geographic (digital) mapping data have been built into a worldwide GIS and numerous small utility type databases (telephone numbers, fax numbers, primary contacts, etc.) have been developed.

Information developed through accident simulation consequence modeling is another aspect of data management as well as real-time and post accident measurement data, e.g. air samples, ground deposition, etc. All relevant data and information must be kept accessible and ultimately archived for retrospective analysis and review of actual accidents.

The ARAC program continues to develop new and evolve working methods of managing the extensive data associated with an emergency response consequence assessment and projection service. Examples of many such databases will be discussed.

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